Muon Scintillator Python Scripts

(29 Apr 2001 – S.Doulas)

Startup procedure:

1. Login on one of the D0 online linux machines (d0ol09,etc..) w/username mutest.
2. > **setup d0online**
3. > **cd python-scripts**
4. Follow the instructions below for running the scripts. Please report any problems to *doulas@fnal.gov*

Valid Argument List for Python Scripts

[crate] =	CM-CET	CM-CWT	FM-NABET	FM-SABET	FM-NCE
	CM-CES	CM-CWS	FM-NABWT	FM-SABWT	FM-NCW
	CM-CEB	CM-CWB	FM-NABWB	FM-NABWB	
			FM-NABEB	FM-SABEB	

[sfe#] = 0-8 The local SFE#, depends on the number of SFE's that are in the crate of interest.

[chn#] = 0-47 The local SFE channel number.

[threshold] = 0-127 Discriminator threshold value in units of mV.

[group] = a, b, or c SFE group a or b or c.

[ADCwidth] = 0-88 ADC gate width in units of ns.

[TGwidth] = 0-88 Trigger Gate width in units of ns.

[F-delay] = 0-20 Fine gate delay setting in 2ns increments.

[C-delay] = 0-7 Course gate delay setting in steps of 18.4ns. (1=18.4ns, 2=38.8ns, etc…)

[lat_preset] = 0-255 L1 Latency Preset in **decimal** value in units of crossings.

[beam_delay] = 0-31 Beam Delay in **decimal** value in steps of 18.4ns.

[pipe_delay] = 0-127 Pipeline delay in **decimal** value in units of crossings.

A. Resetting Scintillator Front-End Crates

To reset all 3 central muon EAST scintillator front-end crates:
> ./rst-east.py
To reset all 3 central muon WEST scintillator front-end crates:
> ./rst-west.py
To reset all 6 forward muon NORTH scintillator front-end crates:
> ./rst-north.py
To reset all 6 forward muon SOUTH scintillator front-end crates:
> ./rst-south.py
To reset ONE specific scintillator front-end crate:
> ./rst-crate.py [crate]

B. Discriminator Threshold Levels

Reading Current Values

To readback the current threshold values for all channels in a single SFE and crate:
> ./ReadTHR.py [crate] [sfe#]

Changing Values

To set the threshold for a single channel in an SFE for a single crate:
> ./SetTHR.py [crate] [sfe#] [chn#] [threshold]
To set the same threshold for all channels in an SFE for a single crate:
> ./SetTHR-sfe.py [crate] [sfe#] [threshold]
To set the same threshold for all channels and all SFEs for a single crate:
> ./SetTHR-crate.py [crate] [threshold]
To set the same threshold for all channels and all SFEs for all central muon east or west crates:
> **./SetTHR-cme.py [threshold]**
> **./SetTHR-cmw.py [threshold]**

C. Trigger Gate Width and Delay

Reading Current Values

To read the current TG gate widths+delays for all SFEs in a single crate:
> **./ReadTG.py [crate]**
To read the current TG gate widths+delays for all SFEs in all central muon east or west crates:
> **./ReadTG-cme.py**
> **./ReadTG-cmw.py**

Changing Values

To set the TG gate width+delay for one group in a single SFE for a single crate:
> ./SetTG.py [crate] [sfe#] [group] [TGwidth] [F-delay] [C-delay]
To set the same TG gate width+delay for all groups in a single SFE for a single crate:
> **./SetTG-sfe.py [crate] [sfe#] [TGwidth] [F-delay] [C-delay]**
To set the same TG gate width+delay for all groups in all SFE's for a single crate:
> **./SetTG-crate.py [crate] [TGwidth] [F-delay] [C-delay]**
To set the same TG gate width+delay for all groups in all SFE's for all central muon east or west crates:
> **./SetTG-cme.py [TGwidth] [F-delay] [C-delay]**
> **./SetTG-cmw.py [TGwidth] [F-delay] [C-delay]**

D. ADC Gate Width and Delay

Reading Current Values

To read the current ADC gate widths+delays for all SFEs in a single crate:
> **./ReadADC.py** [crate]
To read the current ADC gate widths+delays for all SFEs in all central muon east or west crates:
> **./ReadADC-cme.py**
> ./ReadADC-cmw.py

Changing Values

To set the ADC gate width+delay for one group in a single SFE for a single crate:
> **./SetADC.py [crate] [sfe#] [group] [ADCwidth] [F-delay] [C-delay]**
To set the same ADC gate width+delay for all groups in a single SFE for a single crate:
> **./SetADC-sfe.py [crate] [sfe#] [ADCwidth] [F-delay] [C-delay]**
To set the same ADC gate width+delay for all groups in all SFE's for a single crate:
> **./SetADC-crate.py [crate] [ADCwidth] [F-delay] [C-delay]**
To set the same ADC gate width+delay for all groups in all SFE's for all central muon east or west crates:
> **./SetADC-cme.py [ADCwidth] [F-delay] [C-delay]**
> **./SetADC-cmw.py [ADCwidth] [F-delay] [C-delay]**

E. Trigger Manager

Reading Current Values

To read the current SRC Trigger Manager for all central or forward muon crates:
> **./ReadTMAN-cm.py**
> **./ReadTMAN-fm.py**

Changing Values

Currently you can only adjust the following parameters:
L1 Latency Preset
To set the L1 Latency Preset for a single crate:
> ./SetLAT.py [crate] [lat_preset]

Beam Delay
To set the Beam Delay for a single crate:
> ./SetBD.py [crate] [beam_delay]

F. Pipeline Delay

Reading Current Values

To read the current pipeline delay values for all SFE's for all central or forward muon crates:
> **./ReadPIPE-cm.py**
> ./ReadPIPE-fm.py

Changing Values

To set the same pipeline delay for all SFE's in a single crate:
> ./SetPIPE-crate.py [crate] [pipe_delay]
To individually set the pipeline delay for each SFE in a single crate:
> **./SetPIPE-sfe.py [crate] [pipe_delay0] [pipe_delay1] … [pipe_delay8]**